IN THE CLAIMS

1. (Original) A method of authenticating that a test polymer is a tagged polymer, said tagged polymer comprising a substrate polymer, a compound comprising a forensic authentication marker, and a dynamic response authentication marker, said forensic authentication marker being present in the tagged polymer in an amount sufficient to be detected by a forensic analytical technique and said dynamic response authentication marker being present in an amount sufficient to be detected by a dynamic response analytical technique, said method comprising

testing the test polymer for the forensic authentication marker using a forensic analytical technique,

testing the test polymer for the dynamic response authentication marker using a dynamic response analytical technique, and

authenticating that a test polymer is a tagged polymer if the forensic authentication marker and dynamic authentication marker are detected.

2. (Original) The method of claim 1 wherein the compound comprising the forensic authentication marker is present in the tagged polymer in an amount that does not affect an optical or rheological property of the substrate polymer.

3. (Previously Presented) The method of claim 2 wherein the compound comprising the forensic authentication marker is present in the tagged polymer in an amount that does not affect an optical property of the substrate polymer selected from the group consisting of total light transmission, light transmission at 650 nm, light transmission at 780 nm, and bi-refringence.

4. (Original) The method of claim 3 wherein the compound comprising the forensic authentication marker is present in the tagged polymer in an amount that does not affect total light transmission of the substrate polymer.

5. (Original) The method of claim 3 wherein the compound comprising the forensic authentication marker is present in the tagged polymer in an amount that does not affect light transmission of the substrate polymer at 650 nm.

6. (Original) The method of claim 3 wherein the compound comprising the forensic authentication marker is present in the tagged polymer in an amount that does not affect birefringence of the substrate polymer.

7. (Original) The method of claim 1 wherein the forensic analytical technique is selected from the group consisting of resonance spectroscopy methods, SEM-EDX, XPS-ESCA, and combinations comprising at least one of the foregoing forensic analytical techniques.

8. (Previously Presented) The method of claim 1 wherein the dynamic response analytical technique is selected from the group consisting of luminescence spectroscopy, fluorescence spectroscopy, vibrational spectroscopy, electronic spectroscopy, visual observation under specific lighting conditions, color spectrophotometry, and combinations comprising at least one of the foregoing dynamic response analytical techniques.

9. (Withdrawn) The method of claim 8 wherein the forensic analytical technique is NMR and the dynamic response analytical technique is visual observation.

10. (Withdrawn) The method of claim 8 wherein the forensic analytical technique is NMR and the dynamic response analytical technique is selected from the group consisting of luminescence spectroscopy and fluorescence spectroscopy.

11. (Original) The method of claim 1 wherein the forensic authentication marker is present in the tagged polymer in an amount of no more than about 10 weight percent, based on the total weight of the tagged polymer.

12. (Original) The method of claim 11 wherein the forensic authentication marker is present in the tagged polymer in an amount of less than about 5 weight percent, based on the total weight of the tagged polymer.

13. (Original) The method of claim 12 wherein the forensic authentication marker is present in the tagged polymer in an amount of less than about 2 weight percent, based on the total weight of the tagged polymer.

14. (Original) The method of claim 13 wherein the forensic authentication marker is present in the tagged polymer in an amount of less than about 1 weight percent, based on the total weight of the tagged polymer.

15. (Currently Amended) The method of claim 14 wherein the forensic authentication marker is present in the tagged polymer in an amount of at least ~~0.005 weight percent~~0.1 weight percent, based on the total weight of the tagged polymer.

16. (Previously Presented) The method of claim 1 wherein the forensic authentication marker is a member selected from the group consisting of alkyl groups of 2 or more carbon atoms, cycloaliphatic groups of 3 or more carbon atoms, $-OCH_3$ groups, $-CH_3Si$ groups, methyl groups attached to an aryl moiety, divalent substituted phenol groups, and terminal substituted phenol groups.

17. (Currently Amended) The method of claim 16 wherein the forensic authentication marker is selected from the group consisting of ~~$-(CH_2)_n-$ groups~~ $(-CH_2-)_n$, groups where n is a number of from 4 to 14.

18. (Previously Presented) The method of claim 1 wherein the compound comprising a forensic authentication marker is a polymer having a forensic authentication marker.

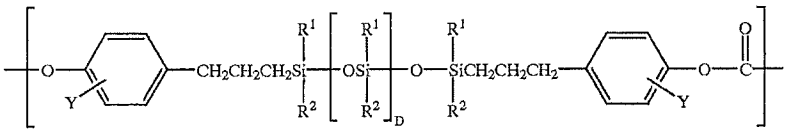
19. (Previously Presented) The method of claim 16 wherein the compound comprising a forensic authentication marker is miscible with polycarbonate.

20. (Previously Presented) The method of claim 19 wherein the compound is selected from the group consisting of DMBPC copolymer, DDDA copolymer, eugenol-siloxane-polycarbonate copolymer, ITR-PC copolymer, poly(1,4-cyclohexanedimethyl-1,4-cyclohexanedicarboxylate), poly(ethylene napthtalate), poly(butylene naphtalate), and poly (cyclohexanedimethanol-co-ethylene terephtalate) and combinations comprising at least one of the compounds.

21. (Withdrawn) The method of claim 20 wherein the compound comprises DDDA copolymer.

22. (Previously Presented) The method of claim 20 wherein the compound comprises DMBPC copolymer.

23. (Withdrawn) The method of claim 20 wherein the compound comprises a eugenol-siloxane-polycarbonate copolymer of the structure:



wherein D is between 10 and 25.

24. (Withdrawn) The method of claim 20 wherein the compound comprises an ITR-PC copolymer wherein the ITR represents 10 to 30 mole percents of the copolymer.

25. (Original) The method of claim 1 wherein the substrate polymer comprises polycarbonate.

26. (Original) The method of claim 1 wherein the dynamic response authentication marker comprises a member selected from the group consisting of an organic fluorophore, an inorganic fluorophore, an organometallic fluorophore, a semi-conducting luminescent nanoparticle, and mixtures thereof.

27. (Original) The method of claim 1 wherein the dynamic response authentication marker has a Stokes shift that is greater than or equal to about 100 nm.

28. (Previously Presented) The method of claim 1 wherein the dynamic response authentication marker is present in the tagged polymer in an amount of about 10^{-18} to about 2 weight percent, based on the total weight of the tagged polymer.

29. (Original) The method of claim 1 wherein the dynamic response authentication marker is detected by fluorescence spectroscopy.

30. (Original) The method of claim 1 wherein the test polymer is in the shape of a formed article.

31. (Original) The method of claim 1 wherein the test polymer is in the shape of a molded article.

32. (Original) The method of claim 31 wherein the molded article is a data storage media.

33. (Previously Presented) A method of authenticating an article, comprising

incorporating together a substrate polymer and a compound comprising a forensic authentication marker and a dynamic response authentication marker to make a tagged polymer, the forensic authentication marker being present in the tagged polymer in an amount sufficient to be detected by a forensic analytical technique,

forming a tagged article from the tagged polymer, and

authenticating that an article is a tagged article by detecting the forensic authentication marker using a forensic analytical technique.

34. (Currently Amended) The method of claim 33 wherein the forensic authentication marker is present in the tagged polymer in an amount of ~~from 0.005~~from 0.1 to 1.0 weight percent, based on the weight of the tagged polymer.

35. (Original) The method of claim 33 wherein the polymer is polycarbonate.

36. (Original) The method of claim 33 wherein the forensic authentication marker is a functional group that is not present in the substrate polymer.

37. (Previously Presented) The method of claim 36 wherein the forensic authentication marker is a member selected from the group consisting of $-(CH_2)_n$, CH_3- attached to an aryl group, $-CH_3Si$, CH_3O, isophtalate or terephtalate moieties, and substituted phenol groups.

38. (Cancelled)

39. (Original) A method of authenticating an article, comprising

incorporating together a substrate polymer, a compound comprising a forensic authentication marker, and a dynamic response authentication marker to provide a tagged polymer,

forming a tagged article from said tagged polymer, and

authenticating that an article is a tagged article by

detecting the forensic authentication marker using a forensic analytical technique, and

detecting the dynamic response authentication marker using a dynamic response analytical technique,

wherein said forensic authentication marker is present in the tagged polymer in an amount sufficient to be detected by a forensic analytical technique and said dynamic response authentication marker is present in an amount sufficient to be detected by a dynamic response analytical technique.

40. (Previously Presented) The method of Claim 1, wherein the forensic analytical marker comprises a functional group and/or structure not originally present in the chemical structure of the substrate polymer so as to be detectable by a forensic analytical technique, which when incorporated with the substrate polymer results in a tagged polymer that has a unique signal detectable by a forensic analytical method;

wherein the forensic analytical marker is a member selected from the group consisting of alkyl groups of 2 or more carbon atoms, cycloaliphatic groups of 3 or more carbon atoms, $-OCH_3$ groups, $-CH_3Si$ groups, methyl groups attached to an aryl moiety, divalent substituted phenol groups, and terminal substituted phenol groups;

wherein the dynamic response analytical marker comprises spectroscopic tags, thermochromic compounds, and optically variable tags; and

wherein the dynamic response analytical marker is a member selected from the group consisting of an organic fluorophore, an inorganic fluorophore, an organometallic fluorophore, a semi-conducting luminescent nanoparticle, and mixtures thereof.